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A NEW SONORELLA FROM THE RINCON MOUNTAINS ARIZONA.

BY H. A. PILSBRY and J. H. FERRISS.

The Rincon Mountains lie near the western border of Cochise County, Arizona, north of the Whetstone Mountains, which are north of the Huachuca range.

In 1907 one of us (Mr. Ferriss) visited the range and procured specimens of a large *Sonorella*, the first mollusk known from these mountains.



Fig. 1. *Sonorella rinconensis*. Cotypes, nat. size.

Where visited the range is rather dry. The rock is granitic, of pre-Cambrian age.¹ Besides *Sonorella rinconensis* only a few shells were taken, minute forms common to the region. *Sonorella rinconensis* was found sticking to large rocks and boulders, a habit not hitherto noticed in the genus. They are rare, the biggest bag made being six in one day.

Sonorella rinconensis n. sp. Pl. XXII, figs. 1-4, 7.

The shell resembles *S. ashmuni* Bartsch in shape. It is pale brown fading to white around the umbilicus, with a broad chocolate shoulder-band, widely whitish-bordered above and below. The surface is smoothish, marked with delicate growth-lines, and under the lens some faint spiral lines may be traced on the last whorl near the suture. The embryonic whorls have sculpture of the *S. hachitana* type. The whorls increase rather slowly to the last, which is much widened, and well rounded peripherally. It descends a little in front. The aperture is rotund-lunate; peristome slightly expanded, dilated at the columella as usual. Umbilicus about as in *S. ashmuni*.

Alt. 16, diam. 26.5, width of umbilicus 4 mm.; whorls fully 5.

The penis is extremely long and slender, and contains a very long papilla. Its lower end is enveloped in a sheath. The retractor

¹ Cf. W. P. Blake, Some Salient Features in the Geology of Arizona, with Evidences of Shallow Seas in Paleozoic Time, *American Geologist*, Vol. 27, 1901, p. 160.

muscle is inserted distally on the lung-floor, as usual. The vagina is excessively long, longer than the penis, and of about equal diameter throughout (slightly over 1 mm.). The spermatheca is globular, its duct much shorter than the vagina. The organs of an individual drowned and dissected fresh measure as follows:

Length of penis,	. . . . .	55	mm.
" " " papilla,	. . . . .	31	"
" " " sheath,	. . . . .	7	"
" " epiphallus,	. . . . .	22	"
" " flagellum,	. . . . .	1.2	"
" " vagina,	. . . . .	70	"
" " spermatheca and duct,	. . . . .	31	"

The liver is maroon colored when fresh.

Types No. 94,313 A. N. S. P., from Rincon Peak, Rincon Mountains, Cochise County, Arizona; cotypes in coll. Ferriss. Specimens were also taken on Mt. Mica and Wrong Mountain, Rincon range.

The jaw (pl. XXII, fig. 7) has six or seven strong ribs, projecting on both margins.

The radula has 26, 15, 1, 15, 26 teeth (pl. XXII, figs. 1, 2, 3). The central and lateral teeth are unicuspid, the cusps stout and obtuse, longer than the basal plates. At about the sixteenth tooth an ectocone appears. Towards the outer edge of the radula the inner cusp becomes bifid; and in many but not all of the outermost six or eight marginals the ectocone is split into two or three denticles (fig. 3).

Conchologically this form stands very close to *S. ashmuni* Bartsch, from Richinbar, south of Prescott, Arizona; also found at Jerome, and at Purtyman's ranch on Oak Creek, 40 miles from Jerome. It would probably be scarcely possible to separate the two species by the shells alone. The genitalia, however, are widely diverse. *S. ashmuni* (Oak Creek) has genitalia of the type found in *hachitana*-like *Sonorellas* of the Peloncillo, Florida and Dos Cabezas ranges, while *S. rinconensis* has the penis and vagina excessively lengthened. While quite unlike any known form, it seems nearer to *S. virilis* than to other species which have been dissected, but differs from that by its far shorter penis-papilla and by the vagina, which is much longer than the penis, while in *S. virilis* the penis is longer.

PLATE XXII.—Figs. 1, 2, 3—*Sonorella rinconensis* Pils. and Ferr. Central lateral and marginal teeth.

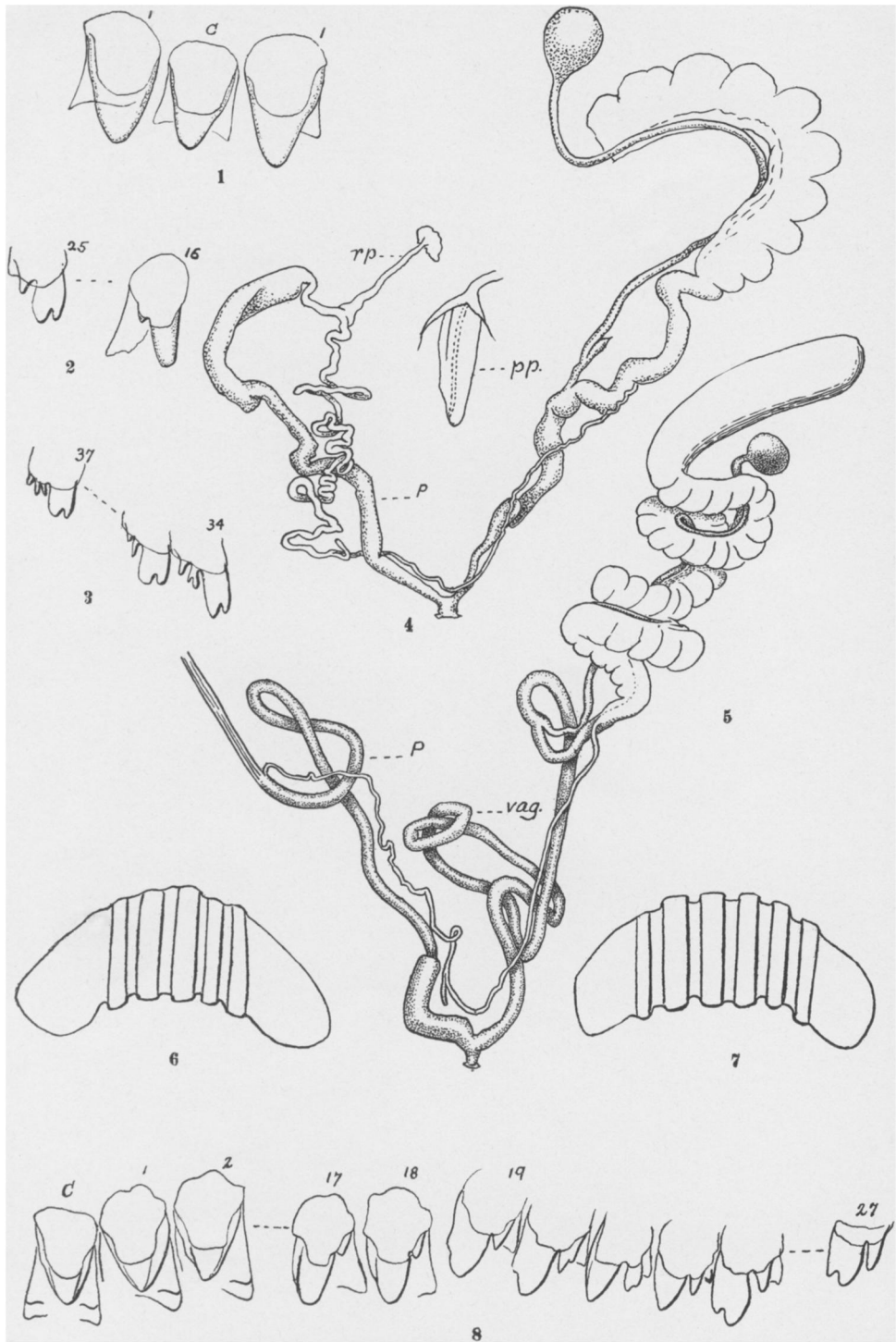
Fig. 4—*Sonorella rinconensis*. Type, genitalia. $\times 2$.

Fig. 5—*Sonorella dalli* Bartsch. No. 94,384, genitalia. $\times 2$

Fig. 6—*Sonorella dalli* Bartsch. Jaw.

Fig. 7—*Sonorella rinconensis*. Jaw.

Fig. 8—*Sonorella dalli*. Teeth.



PILSBRY AND FERRISS: SONORELLA FROM THE RINCON MTS., ETC.